IFWO

```
     3 <110> APPLICANT: Kim, Sung Hyun
     5 <120> TITLE OF INVENTION: NOVEL COMPOSITION AND METHODS FOR THE DIAGNOSIS OF LUNG
CANCER
     7 <130> FILE REFERENCE: GENPAX
C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/689,862B
    10 <141> CURRENT FILING DATE: 2003-10-20
    12 <160> NUMBER OF SEQ ID NOS: 7
    14 <170> SOFTWARE: PatentIn version 3.2
    16 <210> SEQ ID NO: 1
    17 <211> LENGTH: 622
    18 <212> TYPE: DNA
    19 <213> ORGANISM: Homo sapiens
    21 <400> SEQUENCE: 1
    22 actacattga gcatgatgtg tctcctgaat gtgtgtttca tgtgaagtat tgttctgatt      60
    24 aactgacatc cttgcttaca agtttcacta accctttgga gtttaagcac aaatgcacaa     120
    26 agggaaaaga ggacgacctg tttggggttc tttttttgcaa aaacaaacag tcgcatgctg     180
    28 gacgctaaca ccaagcttac actgtgtgtg tgatacggct gagctgctcc ataaggctct     240
    30 atcttttatc tgcccaaggc gtgccctgca actctggaat gcagagcagt tgctggggtg     300
    32 attgacctag gcacagtgga gatatttccc atcttcaaag ccatgcaaaa gggcctcctt     360
    34 gaccaagaca caggcctagt gcttctggaa tctcaggtta tcatgtctgg cctcattgcc     420
    36 cctgagacgg gtgaaaacct ctctttggag gagggcgtag ccagaaacct cattaatccc     480
    38 cagatgtacc agcagctccg ggagctacag gagccctggc cttaataagc aggcttactg     540
    40 agagcagagg ccctctttct gtggtggaag caattgaaaa gacaataatc agtgagacag     600
    42 ttggactgaa aatcttagaa gt                                              622
    45 <210> SEQ ID NO: 2
    46 <211> LENGTH: 268
    47 <212> TYPE: DNA
    48 <213> ORGANISM: Homo sapiens
    50 <400> SEQUENCE: 2
    51 gtggtggtgg gcgcctgtaa tcccagctac ttgggaggct gaggcagaga actgcttgaa      60
    53 cccaggaggc agaggttaca gtgagccaag atcgcaccac tgcactccag cctccagcct     120
    55 tcagccttgg tgacagagca agactctgtc tcaaaaagaa agaaaaagaa aaagactgtg     180
    57 aaagaacaca catcaaaatg ttaagcagtg gtttgtatct tgaaggacaa tttttttta     240
    59 ttggaatgtt tcttctctat atttttggg                                       268
    62 <210> SEQ ID NO: 3
    63 <211> LENGTH: 496
    64 <212> TYPE: DNA
    65 <213> ORGANISM: Homo sapiens
    67 <400> SEQUENCE: 3
    68 cgggcccggg atggactgaa ccaagaccag cagccaactt agaggctcag ttttaaggcc      60
    70 ttgacttggg atagtaagat tagagatttc cagcagtgtc tcctccccgc acctcccccc     120
    72 accccccgc cccccgcttt ttagtgaaga gaaagtcaca taaagataac catttaaaag     180
    74 tgagtaattc aaggccaggc gcggtggccc atgcctgtaa tcccagcact ttgggcggct     240
    76 gaggcaggtg gatcacttga ggttaggagt cgagcccag cctggtcaac atggtgaaac     300
```

RAW SEQUENCE LISTING   DATE: 07/27/2004
PATENT APPLICATION: US/10/689,862B   TIME: 11:21:33

Input Set : **A:\2004 GENPAX.ST25.txt**
Output Set: **N:\CRF4\07272004\J689862B.raw**

```
 78 cccgtctcta ctaaaaatat aaaaattagc cgggtgtggt ggcaggcacc tgtaatccca   360
 80 gctattaggg aggctgaggc aggagaattg cttgagcctg ggaggcagag gttgcagcga   420
 82 gccaagattg tgccactgta ctccagcctg agcgacggag cgagaatctg tctcaaaaaa   480
 84 aaaaaaagat aattca                                                    496
 87 <210> SEQ ID NO: 4
 88 <211> LENGTH: 772
 89 <212> TYPE: DNA
 90 <213> ORGANISM: Homo sapiens
 92 <400> SEQUENCE: 4
 93 agtttctaag gatcatgtct gcgagccagg attcccgatc cagagacaat ggccccgatg    60
 95 ggatggagcc cgaaggcgtc atcgaggtga gactggagaa atggaattct gtcctccccc   120
 97 attacaactt tcagccgtat agagttagag tggcctcttg attgatttcc cagatcatct   180
 99 agaagcagct ggtttcccta aagggaggag ggttgtaagc tctgaggctt ttgttagtag   240
101 gcaccagatt ctgtttgctc ggagactaca gctcagctcc accttttcca tgactcaagc   300
103 tttaatttct ttgcatcccc tagagtaact ggaatgagat tgttgacagc tttgatgaca   360
105 tgaacctctc ggagtccctt ctccgtggca tctacgccta tggttttgag aagccctctg   420
107 ccatccagca gcgagccatt ctaccttgta tcaagggtga gacctctcag tcccagaaga   480
109 cattgtggac tgtccctgac ctgggtagag tggcatctgg ttggtgatgc ccatctcata   540
111 tcagccaggg acaaagcaac tccttgttca tcccagcttg gcttttgatc cgtgcccatg   600
113 cctggttcat gccttggaca cataggtttc ctttaaagag gtggtattgt agccagctta   660
115 tatttgcatc tatagccatg tttctagtcc agcttggtgt gcaatactag atgagttaat   720
117 aactggtcct tgtttctgat ctggttccca ttgtgtaact gtgttgattg gg           772
120 <210> SEQ ID NO: 5
121 <211> LENGTH: 705
122 <212> TYPE: DNA
123 <213> ORGANISM: Homo sapiens
125 <400> SEQUENCE: 5
126 gccttatggc cggggacaac cttagccaac catttaccca aataaagtat aggcgataga    60
128 aattgaaacc tggcgcaata gatatagtac cgcaagggaa agatgaaaaa ttatagccaa   120
130 gcataatata gcaaggacta acccctatac cttctgcata atgaattaac tagaaataac   180
132 tttgcaagga gagccaaagc taagaccccc gaaaccagac gagctaccta agaacagcta   240
134 aaagagcaca cccgtctatg tagcaaaata gtgggaagat ttataggtag aggcgacaaa   300
136 cctaccgagc ctggtgatag ctggttgtcc aagatagaat cttagttcaa cttttaattt   360
138 gcccacagaa ccctctaaat ccccttgtaa atttaactgt tagtccaaag aggaacagct   420
140 ctttggacac taggaaaaaa ccttgtagag agagtaaaaa atttaacacc catagtaggc   480
142 ctaaaagcag ccaccaatta agaaagcgtt caagctcaac acccactacc taaaaaatcc   540
144 caaacatata actgaactcc tcacacccaa ttggaccaat ctatcaccct atagaagaac   600
146 taatgttagt ataagtaaca tgaaaacatt ctcctccgca taagcctgcg tcagattaaa   660
148 acactgaact gacaattaac agcccaatat ctacatcaac caaca                    705
151 <210> SEQ ID NO: 6
152 <211> LENGTH: 301
153 <212> TYPE: DNA
154 <213> ORGANISM: Homo sapiens
156 <400> SEQUENCE: 6
157 tggctcatgg ctacaatccc agcactttgg gaggccgagg caggcagatc accggaggtc    60
159 aggagttcaa gaccagcctg accaacacgg agaaaccccg tcccaactaa aaatacaaaa   120
161 ttagccaggc atggtggcac atgcctgtaa taccagctac tcaggaggct gaggcaggag   180
163 aatgacttga acctgagagg caaatgctgc agtgagccga gatcaggcca ttgcactcca   240
165 gcctgggaaa caagaggcaa aactccgtct ccaaaaaaaa aaaaaaaaaa aaaaaaaaa    300
```

RAW SEQUENCE LISTING   DATE: 07/27/2004
PATENT APPLICATION: US/10/689,862B   TIME: 11:21:33

Input Set : A:\2004 GENPAX.ST25.txt
Output Set: N:\CRF4\07272004\J689862B.raw

```
167 a                                                         301
170 <210> SEQ ID NO: 7
171 <211> LENGTH: 953
172 <212> TYPE: DNA
173 <213> ORGANISM: Homo sapiens
176 <220> FEATURE:
177 <221> NAME/KEY: misc_feature
178 <222> LOCATION: (354)..(354)
179 <223> OTHER INFORMATION: n is a, c, g, or t
181 <220> FEATURE:
182 <221> NAME/KEY: misc_feature
183 <222> LOCATION: (394)..(394)
184 <223> OTHER INFORMATION: n is a, c, g, or t
186 <220> FEATURE:
187 <221> NAME/KEY: misc_feature
188 <222> LOCATION: (403)..(403)
189 <223> OTHER INFORMATION: n is a, c, g, or t
191 <220> FEATURE:
192 <221> NAME/KEY: misc_feature
193 <222> LOCATION: (418)..(418)
194 <223> OTHER INFORMATION: n is a, c, g, or t
196 <220> FEATURE:
197 <221> NAME/KEY: misc_feature
198 <222> LOCATION: (429)..(429)
199 <223> OTHER INFORMATION: n is a, c, g, or t
201 <220> FEATURE:
202 <221> NAME/KEY: misc_feature
203 <222> LOCATION: (432)..(432)
204 <223> OTHER INFORMATION: n is a, c, g, or t
206 <220> FEATURE:
207 <221> NAME/KEY: misc_feature
208 <222> LOCATION: (437)..(437)
209 <223> OTHER INFORMATION: n is a, c, g, or t
211 <220> FEATURE:
212 <221> NAME/KEY: misc_feature
213 <222> LOCATION: (455)..(455)
214 <223> OTHER INFORMATION: n is a, c, g, or t
216 <220> FEATURE:
217 <221> NAME/KEY: misc_feature
218 <222> LOCATION: (459)..(459)
219 <223> OTHER INFORMATION: n is a, c, g, or t
221 <220> FEATURE:
222 <221> NAME/KEY: misc_feature
223 <222> LOCATION: (462)..(462)
224 <223> OTHER INFORMATION: n is a, c, g, or t
226 <220> FEATURE:
227 <221> NAME/KEY: misc_feature
228 <222> LOCATION: (501)..(501)
229 <223> OTHER INFORMATION: n is a, c, g, or t
```

```
231 <220> FEATURE:
232 <221> NAME/KEY: misc_feature
233 <222> LOCATION: (647)..(647)
234 <223> OTHER INFORMATION: n is a, c, g, or t
236 <220> FEATURE:
237 <221> NAME/KEY: misc_feature
238 <222> LOCATION: (666)..(666)
239 <223> OTHER INFORMATION: n is a, c, g, or t
241 <220> FEATURE:
242 <221> NAME/KEY: misc_feature
243 <222> LOCATION: (702)..(702)
244 <223> OTHER INFORMATION: n is a, c, g, or t
246 <220> FEATURE:
247 <221> NAME/KEY: misc_feature
248 <222> LOCATION: (709)..(709)
249 <223> OTHER INFORMATION: n is a, c, g, or t
251 <220> FEATURE:
252 <221> NAME/KEY: misc_feature
253 <222> LOCATION: (736)..(736)
254 <223> OTHER INFORMATION: n is a, c, g, or t
256 <220> FEATURE:
257 <221> NAME/KEY: misc_feature
258 <222> LOCATION: (750)..(750)
259 <223> OTHER INFORMATION: n is a, c, g, or t
261 <220> FEATURE:
262 <221> NAME/KEY: misc_feature
263 <222> LOCATION: (785)..(785)
264 <223> OTHER INFORMATION: n is a, c, g, or t
266 <220> FEATURE:
267 <221> NAME/KEY: misc_feature
268 <222> LOCATION: (811)..(811)
269 <223> OTHER INFORMATION: n is a, c, g, or t
271 <220> FEATURE:
272 <221> NAME/KEY: misc_feature
273 <222> LOCATION: (837)..(837)
274 <223> OTHER INFORMATION: n is a, c, g, or t
276 <220> FEATURE:
277 <221> NAME/KEY: misc_feature
278 <222> LOCATION: (844)..(844)
279 <223> OTHER INFORMATION: n is a, c, g, or t
281 <220> FEATURE:
282 <221> NAME/KEY: misc_feature
283 <222> LOCATION: (853)..(853)
284 <223> OTHER INFORMATION: n is a, c, g, or t
286 <220> FEATURE:
287 <221> NAME/KEY: misc_feature
288 <222> LOCATION: (875)..(875)
289 <223> OTHER INFORMATION: n is a, c, g, or t
291 <220> FEATURE:
```

RAW SEQUENCE LISTING   DATE: 07/27/2004
PATENT APPLICATION: US/10/689,862B   TIME: 11:21:33

Input Set : A:\2004 GENPAX.ST25.txt
Output Set: N:\CRF4\07272004\J689862B.raw

```
292 <221> NAME/KEY: misc_feature
293 <222> LOCATION: (880)..(880)
294 <223> OTHER INFORMATION: n is a, c, g, or t
296 <220> FEATURE:
297 <221> NAME/KEY: misc_feature
298 <222> LOCATION: (886)..(886)
299 <223> OTHER INFORMATION: n is a, c, g, or t
301 <220> FEATURE:
302 <221> NAME/KEY: misc_feature
303 <222> LOCATION: (896)..(896)
304 <223> OTHER INFORMATION: n is a, c, g, or t
306 <220> FEATURE:
307 <221> NAME/KEY: misc_feature
308 <222> LOCATION: (906)..(907)
309 <223> OTHER INFORMATION: n is a, c, g, or t
311 <220> FEATURE:
312 <221> NAME/KEY: misc_feature
313 <222> LOCATION: (918)..(918)
314 <223> OTHER INFORMATION: n is a, c, g, or t
316 <220> FEATURE:
317 <221> NAME/KEY: misc_feature
318 <222> LOCATION: (925)..(925)
319 <223> OTHER INFORMATION: n is a, c, g, or t
321 <220> FEATURE:
322 <221> NAME/KEY: misc_feature
323 <222> LOCATION: (931)..(931)
324 <223> OTHER INFORMATION: n is a, c, g, or t
326 <220> FEATURE:
327 <221> NAME/KEY: misc_feature
328 <222> LOCATION: (937)..(937)
329 <223> OTHER INFORMATION: n is a, c, g, or t
331 <220> FEATURE:
332 <221> NAME/KEY: misc_feature
333 <222> LOCATION: (940)..(940)
334 <223> OTHER INFORMATION: n is a, c, g, or t
336 <220> FEATURE:
337 <221> NAME/KEY: misc_feature
338 <222> LOCATION: (945)..(945)
339 <223> OTHER INFORMATION: n is a, c, g, or t
341 <220> FEATURE:
342 <221> NAME/KEY: misc_feature
343 <222> LOCATION: (951)..(951)
344 <223> OTHER INFORMATION: n is a, c, g, or t
346 <400> SEQUENCE: 7
347 gatatgaaat gactccctca gacaattttt aaaaagataa gttttttaaa gaccaataaa      60
349 aacctaaggg acaaaataag acattgatga tttgaaattt ctttgtaaca aaatatacta     120
351 taaatttgaa agcaaaggat agactggaag agaatatttg caatatttaa aacaggctaa     180
353 tggtcagtgc tcacaatata taacatgctc tcatgtatca attttaaaac aacacccttg     240
355 taaaaaaaaa aaaaaaaagg atccaatgag gcagggtaca aataacaaat tcttagcaaa     300
```

RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 07/27/2004
PATENT APPLICATION: US/10/689,862B   TIME: 11:21:34

Input Set : A:\2004 GENPAX.ST25.txt
Output Set: N:\CRF4\07272004\J689862B.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:7; N Pos. 354,394,403,418,429,432,437,455,459,462,501,647,666,702,709
Seq#:7; N Pos. 736,750,785,811,837,844,853,875,880,886,896,906,907,918,925
Seq#:7; N Pos. 931,937,940,945,951

VERIFICATION SUMMARY   DATE: 07/27/2004
PATENT APPLICATION: **US/10/689,862B**   TIME: 11:21:34

Input Set : **A:\2004 GENPAX.ST25.txt**
Output Set: **N:\CRF4\07272004\J689862B.raw**

```
L:9   M:270 C: Current Application Number differs, Replaced Current Application Number
L:357 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:300
L:359 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:360
L:361 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:420
L:363 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:480
L:367 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:600
L:369 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:660
L:371 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:720
L:373 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:780
L:375 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:840
L:377 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:900
```